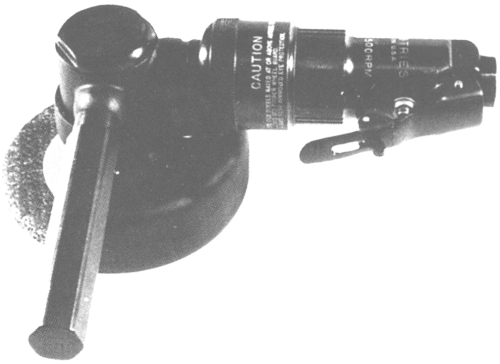
COOPER Tools

Operation & Service Manual
823067 **3/02**

Cleco®

116 & 136GL - 115 R.A. Series Right Angle Grinders



XXX	G	L	X	X	-	115	A	-	X	X	X

Series:
116, 136

Grinder:

Throttle:
L Lever

Exhaust Terminations:
F Front
R Rear
S Side

Handle:
— Standard
E Extended

RPM:
115

Model:
A Right Angle

Wheel Type:
D Type 27
W Type 1 Wheel
C Collet

Terminations:

3	3/16
4	1/4
5	5/16
6	3/8
6M	6mm
3T	3/8-24
5T	5/8-11

Guard:

4	4 In.
45	4 1/2 In.
5	5 In.

For additional product information visit our website at http://www.clecotools.com

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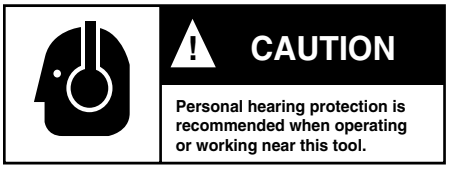
Safety Recommendations

For your safety and the safety of others, read and understand the safety recommendations before operating any grinder.

Always wear protective equipment and clothing.

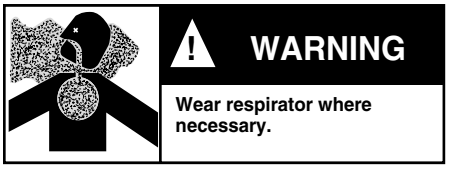
Caution: Faceshields do not provide unlimited protection against flying particles and are not to be considered as eye protection. ANSI Z87.1 states that separate eyewear shall be used. For additional information on eye protection, refer to Federal OSHA Regulations, 29 CFR, Section 1910.133, Eye and Face Protection, and ANSI Z87.1, Occupational and Educational Eye and Face Protection. This standard is available from the American National Standards Institute, Inc., 11 West 42nd Street, New York, NY 10036.



Hearing protection is recommended in high noise areas (above 85 dBA). Close proximity of additional tools, reflective surfaces, process noises, and resonant structures can substantially contribute to the sound level experienced by the operator. Proper hearing conservation measures, including annual audiograms and training in the use and fit of hearing protection devices may be necessary. For additional information on hearing protection, refer to Federal OSHA Regulations, 29 CFR, Section 1910.95, Occupational Noise Exposure, and American National Standards Institute, ANSI S12.6, Hearing Protectors.

- **Gloves and other protective clothing should be worn as required, unless they create a greater hazard.**

- **Do not wear loose fitting clothing, or clothing that may restrict movement, become entangled or in any way interfere with the safe operation of the grinder.**

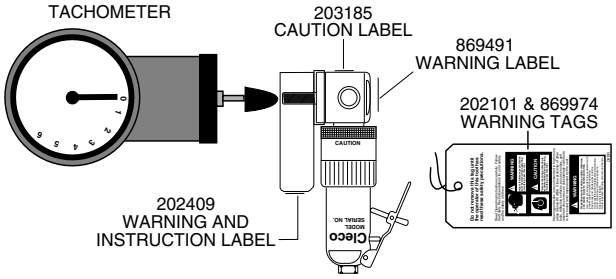


Grinding or other use of this tool may produce hazardous fumes and/or dust. To avoid adverse health effects utilize adequate ventilation and/or a respirator. Respirators should be selected, fitted, used and maintained in accordance with Occupational Safety and Health Administration and other applicable regulations. Read the material safety data sheet on any materials involved in the grinding process.

Cleco grinders are designed to operate on 90 psig (6.2 bar) max. air pressure. If the tool is properly sized and applied, higher air pressure is unnecessary. Excessive air pressure increases the loads and stresses on the tool parts and may result in breakage. Installation of a filter-regulator-lubricator in the air supply line is highly recommended.

Before the tool is connected to air supply, check throttle for proper operation, i.e., throttle moves freely and returns to closed position. Being careful not to endanger adjacent personnel, clear air hose of accumulated dust and moisture. Use protective barriers where necessary — hot sparks can burn. Barriers also help reduce noise levels. Before removing tool from service or changing accessories, make sure air line is shut off and drained of air. This will prevent tool from operating if throttle is accidently engaged. Do not use tool to drain residual air from air line, instead use of a self-relieving valve located near tool is highly recommended.

The speed rating and warning information on the tool should be maintained or replaced for legibility in the event of damage. Before installing an accessory or a grinding wheel, after all tool repairs, and whenever a grinder is issued for use, check the free speed of the tool with a tachometer to make sure actual free speed at 90 psig does not exceed rated free speed stamped on tool. Grinders in use on the job must be checked at least once every 20 hours of operation, or once a week, whichever is most frequent.
Guard (if wheel type grinder) must be securely attached to the grinder with the bolt, nut and lockwasher in place and torqued to 300 in. lbs.



WARNING
Fragments from an abrasive wheel can cause serious injury or death.
Do not operate without proper wheel guard in place.

INSPECT GRINDING WHEEL OR ACCESSORY
Fragments from a grinding wheel, mounted wheel or carbide burr that breaks or comes apart while rotating can cause serious injury or even death. Inspect grinding wheel or accessory. Check the maximum safe RPM marked on wheel, accessory or package. Never use wheels or accessories rated at or below actual tool speed. **Cracked, dropped, faulty, or bent accessories are dangerous.** Suspect accessories should not be used and should be disposed of. Look for cracks, chips, water stains, or signs of abuse or improper storage. Causes of grinding wheel failures have been traced to such factors as:

- Dropping, bumping, or abuse (careless handling of the grinder)
- Improper mounting
- Imbalance
- Improper shipment or storage, or age
- Mismatched speed ratings
- Exposure to water, solvents, high humidity, freezing, and extreme temperatures

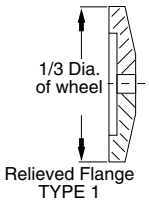
Safety Recommendations

Wheels or accessories known to have been subjected to any of the conditions above can burst violently and should be destroyed rather than risk their use by someone who may not notice that they are damaged.

Do not operate 116/136 RA grinder without a wheel guard if used with Type 1 (straight) or Type 27 (depressed center) wheels. Guard must not be modified, and any guard damaged or bent must be replaced. Grinder must be used such that opening in guard is away from operator.

CHECK FLANGE

A Type 1 wheel grinder's flanges must be relieved, free of nicks that might cause stress concentrations on the wheel which can cause cracks. Blotters must be used and be as large in diameter as the flanges. Diameters of driving and outer flange must be equal and measure at least 1/3 dia. of the wheel. If flanges are less than 1/3 dia. of wheel, do not use grinder or select proper wheel. Spindle end nut must be tightened firmly against outer flange to insure necessary friction against blotters to drive wheel. **Caution:** Overtightening can cause wheel breakage. Type 1 breakage can also occur if:



Relieved Flange
TYPE 1

- Outer flange is left off
- Outer flange is reversed
- A washer is used in place of either flange
- Outer and driving flange are different diameters
- Blotters are not used
- Wheel is side loaded (Grind on periphery only!)

Check spindle and driving flange on grinders used with Type 27 (depressed center) wheels. Spindles must not be bent and threads must be free of any damage that might keep a wheel from being centrally mounted or seated properly against the driving flange. The spindle end nut should be tightened to prevent wheel slippage and satisfactorly transfer the driving torque of the spindle to the wheel through the adapter assembly.

COLLET EQUIPPED TOOLS

The collet should be checked to assure it is in good operating condition and is secure to the tool. Accessories should be inserted to full depth of the collet. **Avoid excessive overhang and/or excessive down force that can result in vibration, or a bent spindle.** Possible loss or ejection of accessory can result. Collet equipped 116/136 RA grinders are intended for use with small carbide burrs and mounted wheels only. Do not use these tools for Type 1 or Type 27 wheel grinding. If your application calls for a Type 1 or Type 27 wheel, consult your Cleco representative for a wheel grinder equipped with the proper wheel guard.

BEGINNING GRINDING OPERATION

Before using or after mounting a wheel or accessory, tool must be run for one minute in a protected enclosure to check the integrity of the wheel or accessory. During this time or any other time, no one should stand in front or in line of the wheel or accessory. When starting work with a cold wheel, apply it gradually to the workpiece until it becomes warm. **Do not continue to use a grinder if:**

- It is not equipped with proper wheel guard
- It starts to vibrate
- You sense changes in tool speed or an unusual increase in noise that would indicate tool is running at excessive speed
- You notice excessive end play in spindle
- You hear any unusual sound from grinder

RETURN THE TOOL TO THE TOOL CRIB FOR SERVICE IMMEDIATELY!

⚠ WARNING

Repetitive work motions and/or vibration may cause injury to hands and arms.
Use minimum hand grip force consistent with proper control and safe operation.
Keep body and hands warm and dry.
Avoid anything that inhibits blood circulation.
Avoid continuous vibration exposure.
Keep wrists straight.
Avoid repeated bending of wrists and hands.

Some individuals may be susceptible to disorders of the hands and arms when performing tasks consisting of highly repetitive motions and/or exposure to extended vibration. Cumulative trauma disorders such as carpal tunnel syndrome and tendonitis may be caused or aggravated by repetitious, forceful exertions of the hands and arms. Vibration may contribute to a condition called Raynaud's Syndrome. These disorders develop gradually over periods of weeks, months, and years. It is presently unknown to what extent exposure to vibrations or repetitive motions may contribute to the disorders. Hereditary factors, vasculatory or circulatory problems, exposure to cold and dampness, diet, smoking and work practices are thought to contribute to the conditions. Tool operators should be aware of the following warning signs and symptoms so that a problem can be addressed before it becomes a debilitating injury.

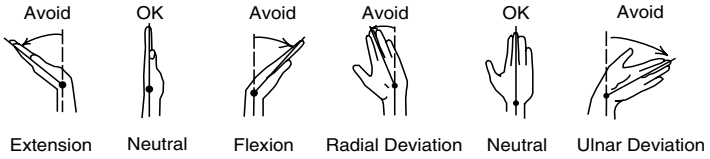
Any user suffering prolonged symptoms of tingling, numbness, blanching of fingers, clumsiness or weakened grip, nocturnal pain in the hand, or any other disorder of the shoulders, arms, wrists, or fingers is advised to consult a physician. If it is determined that the symptoms are job related or aggravated by movements and postures dictated by the job design, it may be necessary for the employer to take steps to prevent further occurrences. These steps might include, but are not limited to, repositioning the workpiece or redesigning the workstation, reassigning workers to other jobs, rotating jobs, changing work pace, and/or changing the type of tool used so as to minimize stress on the operator. Some tasks may require more than one type of tool to obtain the optimum operator/tool/task relationship.

The proper selection of the correct type of grinder is an important ergonomic consideration. Each application should be carefully considered and the tool chosen that will minimize the stresses on the operator that can lead to the onset of cumulative trauma disorders. Some tasks require more than one type of tool to obtain the optimum operator/tool/task relationship. Cleco has a complete selection of tools including vertical, straight, angle, and extended grinders that make possible the correct ergonomic match of the operator, tool, and task.

Safety Recommendations

The following suggestions will help reduce or moderate the effects of repetitive work motions and/or extended vibration exposure:

- Use a minimum hand grip force consistent with proper control and safe operation
- Keep body and hands warm and dry (cold weather is reported to be a major factor contributing to Raynaud's Syndrome)
- Avoid anything that inhibits blood circulation
  - —Smoking Tobacco (another contributing factor)
  - —Cold Temperatures
  - —Certain Drugs



- Tasks should be performed in such a manner that the wrists are maintained in a neutral position, which is not flexed, hyperextended, or turned side to side
- Stressful postures should be avoided — select a tool appropriate for the job and work location
- Avoid highly repetitive movements of hands and wrists, and continuous vibration exposure (after each period of operation, exercise to increase blood circulation)
- **Use quality accessories** (the primary source of vibration when using a grinder is an accessory that is out of balance, out of round, untrue, or possibly any combination of all three; avoid excessive overhang of accessory in collet)
- Use carbide burrs that are sharp, as dull burrs require more force and effort to remove material
- Keep tool well maintained and replace worn parts (a preventive maintanance program with scheduled inspections is highly recommended)

Work gloves with vibration reducing liners and wrist supports are available from some manufacturers of industrial work gloves. Tool wraps and grips are also available from a number of different manufacturers. These gloves, wraps, and wrist supports are designed to reduce and moderate the effects of extended vibration exposure and repetitive wrist trauma. Since they vary widely in design, material, thickness, vibration reduction, and wrist support qualities, it is recommended that the glove, tool wrap, or wrist support manufacturer be consulted for items designed for your specific application. **WARNING! Proper fit of gloves is important. Improperly fitted gloves may restrict blood flow to the fingers and can substantially reduce grip strength.**

USE QUALITY ABRASIVE WHEELS

The primary source of vibration when using a portable grinder is an abrasive wheel that is out of balance, out of round, untrue, or possibly any combination of all three.

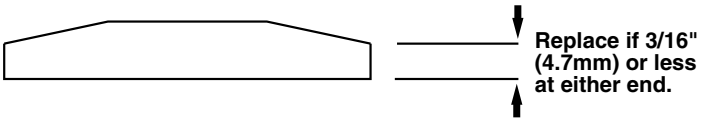
The use of quality abrasive wheels which are well balanced, round, and true is highly recommended as they have been found to significantly reduce vibration. Some abrasive wheels lose their balance, roundness, and trueness as they wear from use. Because of the abusive nature of the vibration caused by out of balance, out of round, and untrue condition of some abrasive wheels, it is felt that these wheels are more suseptible to failure. Excessive vibration may signal eminent wheel failure. Out of balance abrasive wheels are dangerous. Flat spotting of the abrasive wheel, caused by grinding the wheel to a stop after the power has been shut off can result in changes to the balance and shape of the wheel. Be sure the grinding wheel has stopped before setting the tool down. Set the tool in a tool rest or tool holder when not in use.

WIRE BRUSHES

If a grinder is used for wire brushing applications the same problems of balance, roundness, and truth as experienced with abrasive wheels prevail. Use quality wire brushes.

USE A PREVENTIVE MAINTENANCE PROGRAM

Tool abuse or poor maintenance procedures can amplify and contribute to the vibration produced by the abrasive wheel. A preventive maintenance program featuring scheduled periodic inspections and proper maintenance is the best way to assure safety in your portable grinding operations. A well managed program can, for example, detect such things as speed variations due to wear, flanges or spindles that have been damaged from abuse, or bad bearings damaged by foreign matter or lack of lubrication. Problems such as these can affect the wheel trueness when the grinder is running and contribute to the vibration. Rotor blades that are worn or chipped can lock up the motor and damage motor components. Rotor blades should be checked periodically and replaced if they measure less than 3/16" (4.7mm) at either end.



Proper repair procedures and the use of original Cleco service parts and bearings rather than substitutes will return the tool to factory specifications of precision and balance, and minimize vibration.

PROPER LUBRICATION

An automatic in-line filter-regulator-lubricator is recommended as it increases tool life and keeps the tool in sustained operation. The in-line lubricator should be regularly checked and filled with a good grade of 10W machine oil. Proper adjustment of in-line lubricator is performed by placing a sheet of paper next to exhaust ports and holding throttle open approximately 30 seconds. Lubricator is properly set when a light stain of oil collects on paper. Excessive amounts of oil should be avoided.

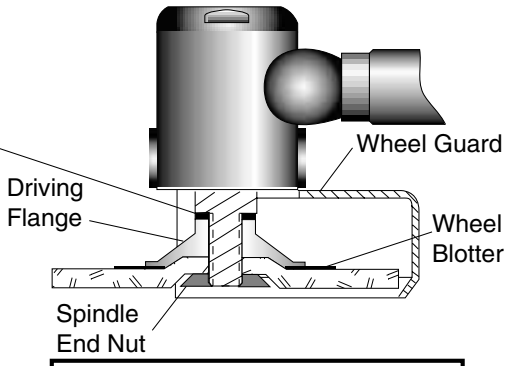
STORAGE

In the event it becomes necessary to store tool for an extended period of time (overnight, weekend, etc.), it should receive a generous amount of lubrication at that time and run for several seconds to distribute oil before disconnecting from air supply. This will reduce corrosion and displace water that may be trapped in tool.

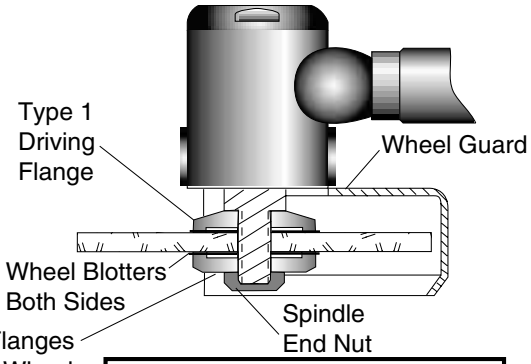
This information is a compilation of general safety practices obtained from various sources available at the date of production. However, our company does not represent that every acceptable safety practice is offered herein, or that abnormal or unusual circumstances may not warrant or require additional procedures. Your work may require additional specific safety procedures. Follow these procedures as required by your company. For more information, see the latest edition of ANSI B186.1, Safety Code for Portable Air Tools, and ANSI B7.1, Safety Requirements for the Use, Care, and Protection of Abrasive Wheels, available from the American National Standards Institute, Inc., 11 West 42nd Street, New York, NY 10036.

116 & 136GL- 115 R.A.
RIGHT ANGLE GRINDER AND SANDER EQUIPMENT

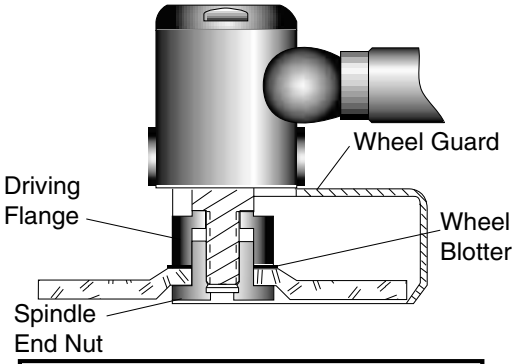
Spacer(s) 864159	
Wheel Thickness	No. Required
1/8"	2
3/16"	1
1/4"	None



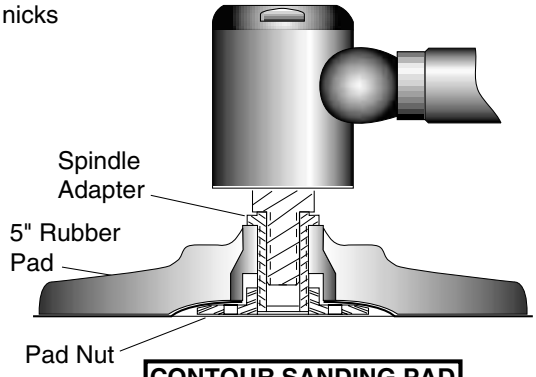
4" TYPE 27 WHEEL with 3/8" Hole


Type 1 Driving Flange
Wheel Guard
Wheel Blotters Both Sides
Spindle End Nut
Relieved Flanges 1/3 Dia. of Wheel Flange Dias. Equal Clean, no nicks or burrs

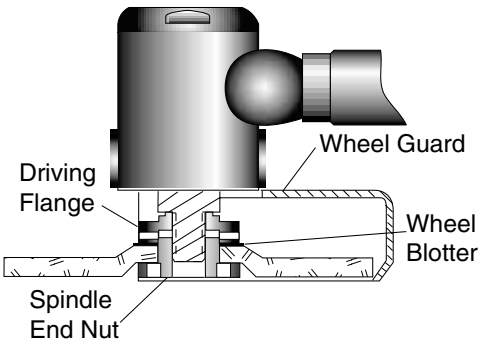
4" TYPE 1 WHEEL with 3/8" Hole



4-1/2" TYPE 27 WHEEL with 7/8" Hole



CONTOUR SANDING PAD



100mm TYPE 27 WHEEL with 16mm Hole

TOOL APPLICATION	SPINDLE	DRIVING FLANGE	OUTER FLANGE	NUT	WRENCH	GUARD
4" Type 27 with 3/8" Hole	3/8- 24	869496	not applicable	843422	849834 849844	889208
4- 1/2" Type 27 with 7/8" Hole	3/8- 24	202062	not applicable	202061	849844 843356	202063
4- 1/2" Type 27 with 5/8" Thread	5/8- 11	843846	not applicable	not applicable	849844	203142
100mm Type 27 with 16mm Hole	3/8- 24	203138	not applicable	203139	849834 843356	889208
4" Type 1 with 3/8" Hole	3/8- 24	202223	865991	203409	849837 849844	889208

TOOL APPLICATION	SPINDLE ADAPTER	PAD	PAD NUT	WRENCH
5" Sanding Pad	3/8"- 24 to 5/8"- 11 869495	849848	849259	849834

OPERATING INSTRUCTIONS

READ SAFETY RECOMMENDATIONS BEFORE CONNECTING TOOL.

The 116 and 136 Series Right Angle Grinders are designed to operate on 90 psig (6.2 bar) maximum air pressure, using a 1/4" hose up to 8' in length for the 116 and a 5/16" hose for the 136. If additional length is required, the next larger hose size may be connected to the 8' whip hose.

LUBRICATION

An automatic in-line filter-lubricator is recommended as it increases tool life and keeps the tool in sustained operation. The in-line lubricator should be regularly checked and filled with a good grade of 10W machine oil. Proper adjustment of the in-line lubricator is performed by placing a sheet of paper next to the exhaust ports and holding the throttle open approximately 30 seconds. The lubricator is properly set when a light stain of oil collects on the paper. Excessive amounts of oil should be avoided. Application of the tool should govern how frequently it is greased. It is recommended that the right angle gears receive a generous amount of NLGI 2-EP grease through the grease fittings after 40 hours of operation.

STORAGE

In the event that it becomes necessary to store the tool for an extended period of time (overnight, weekend, etc.), it should receive a generous amount of lubrication at that time and again when returned to service. The tool should be stored in a clean and dry environment.

SERVICE INSTRUCTIONS

DISASSEMBLY

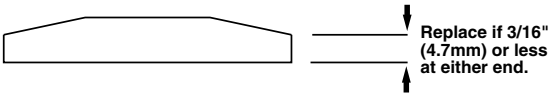
To disassemble the tool, unscrew the right angle head (left hand threads). This will allow the removal of the motor unit from the backhead.

To remove the pinion gear, No. 863893, insert a 3/16" Allen wrench into the rotor. Hold the Allen wrench in a vise and unscrew the pinion gear. Use a suitable driver to drive the front rotor shaft out of the front rotor bearing. After removing the cylinder and rotor blades, the rear rotor shaft may be driven out of the rear rotor bearing.

To disassemble the right angle head, unscrew the spindle bearing cap. This will permit the removal of the spindle assembly. Remove the two wavy washers from the head. Remove the upper spindle bearing, the retainer ring, and the gear spacer from the spindle. Use a suitable gear puller and remove the gear from the spindle and press the bearing off the spindle, if necessary.

REASSEMBLY

The tool is reassembled in the reverse order of disassembly. Wash all parts in a solvent and inspect for damage or wear. It is recommended when replacing worn gears in the angle head, that both gears be replaced. Do not attempt to mix worn gears with new gears as it will only result in short gear life. 881789 is the gear set. It is recommended that new rotor blades be installed at each repair cycle. If not replaced, the used ones must measure a minimum of 3/16" (4.7mm) at both ends.



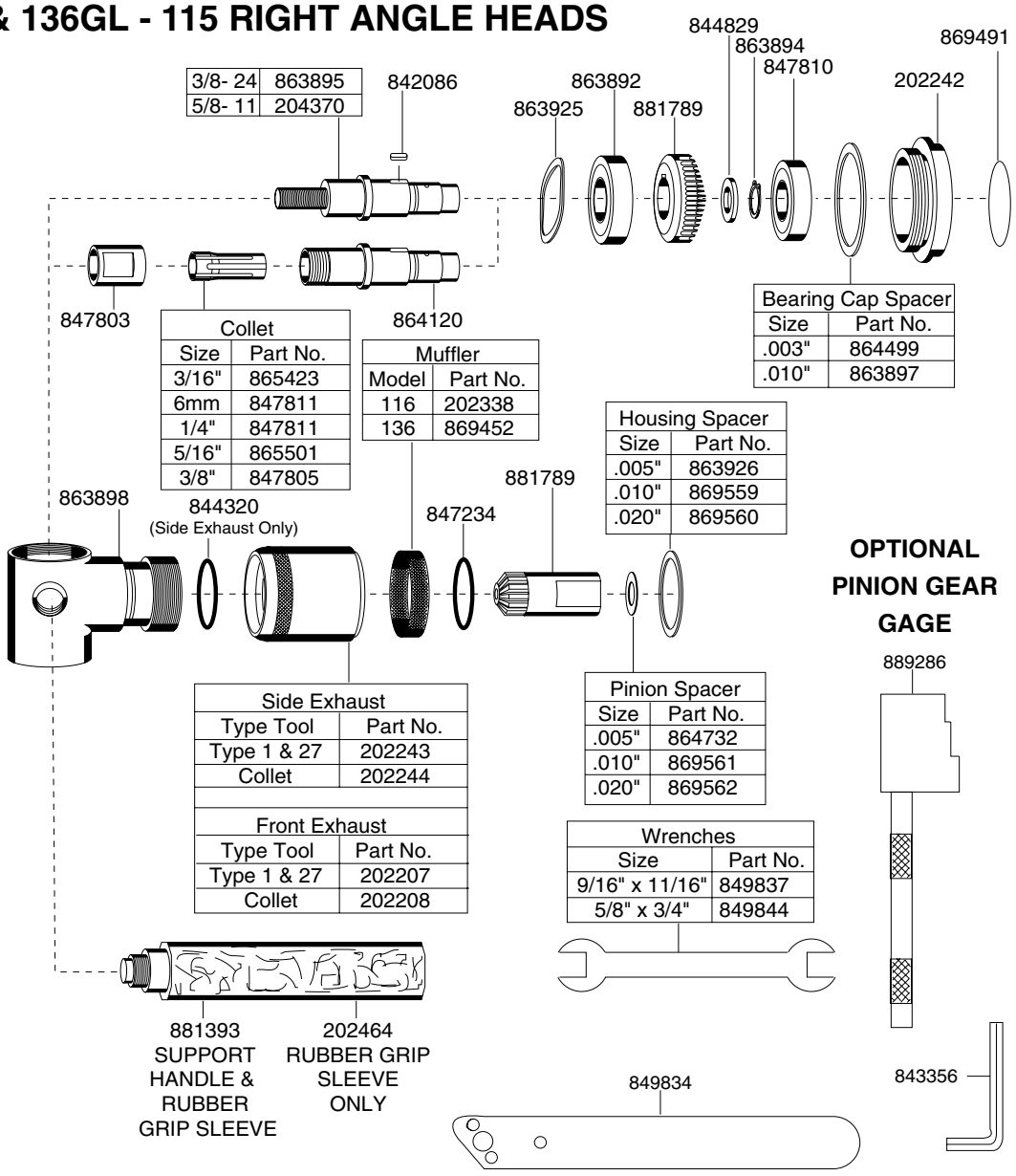
Replace bearings that are rough or have excessive end play.

Install the front rotor bearing in the front bearing plate and measure the distance from the face of the bearing plate to the inner race of the bearing with the bearing race loaded rearward. Select or fit by sanding a rotor collar .001" (.025mm) to .002" (.050mm) longer than this measurement. Install the rotor blades, cylinder, rear bearing plate and rear bearing on the rotor. After final assembly of the motor unit, the cylinder should be held securely but not tightly between the two (2) plates. The rotor should not rub either plate.

Insert the motor unit into the backhead and screw on the **EMPTY** right angle head (left hand threads). NOTE: When installing a motor into a rear exhaust backhead, the steel ball located in the front plate must line up with the groove in the backhead. Head positioning spacers are used to position the right angle head in relationship to the throttle lever. Each .005" added or subtracted will change the location of the head approximately 30 degrees. This must be done prior to setting the pinion height.

Measure the distance from the end of the pinion gear to the opposite wall of the 1 3/8" bore in the right angle head. Add pinion spacers to bring this dimension up to 1.120/1.124" (28.448/28.550mm). Next, drive the lower spindle bearing on the spindle (assemble all bearings by pressing or driving on the inner race only). Insert the key in the spindle and press on the gear. Assemble the gear spacer and retainer ring to the spindle and press on the upper spindle bearing. Unscrew the empty right angle head (left hand threads) and insert the two wavy washers and the spindle assembly. Screw on bearing cap without the bearing cap spacers. Screw the exhaust deflector and the assembled right angle head on the backhead. Adjust the bearing cap (this moves the gear up and down) until the backlash is very small but still noticeable. The gear mesh may be adjusted in this manner while running the tool to obtain quiet running engagement. Gauge the space beneath the cap and select and equivalent thickness of the bearing cap spacers. Apply grade 271 Loctite to the clean threads on the bearing cap and tighten to 75ft./lbs. (101.7Nm) minimum against the spacers. After reassembly, place a few drops of 10W machine oil in the air inlet before installing the hose. This will ensure positive lubrication of all motor parts as soon as the air is applied. CAUTION: After the grinder is reassembled, be sure to check the free speed (R.P.M.) for proper speed with a dependable tachometer before returning the grinder to service.

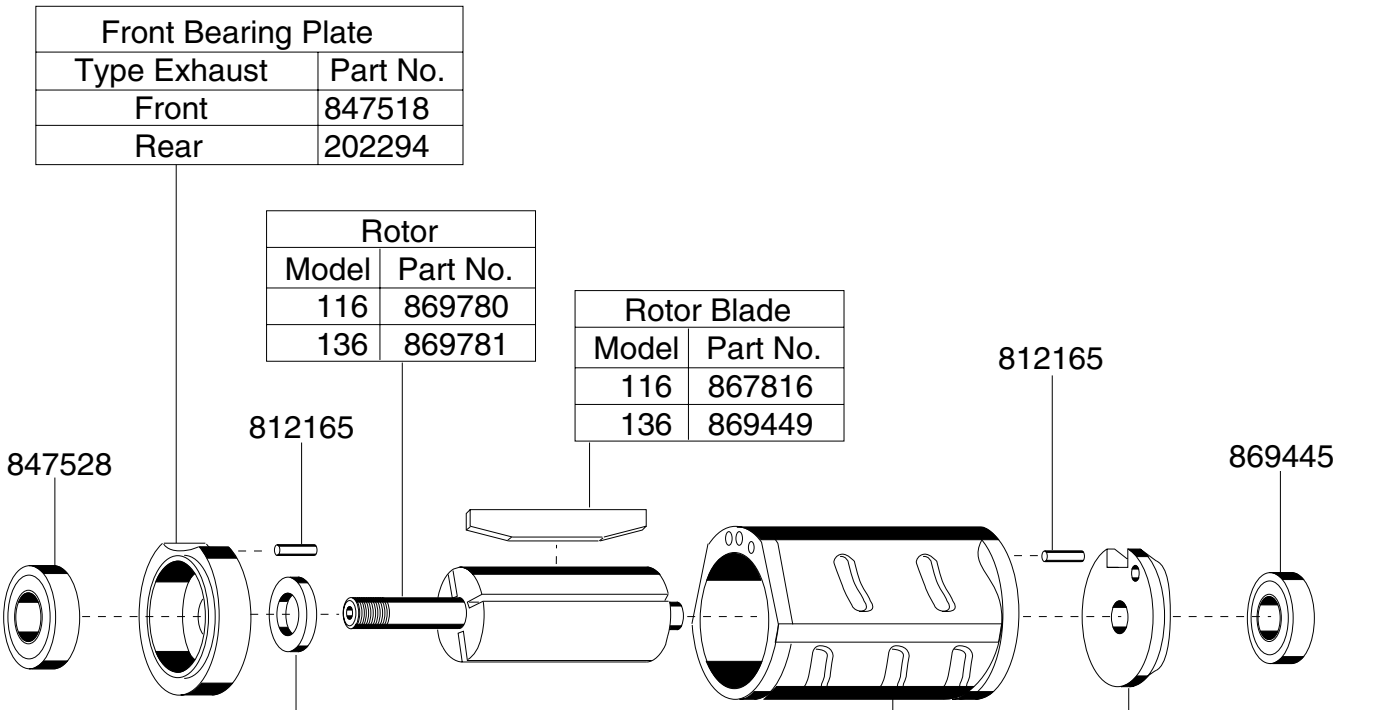
116 & 136GL - 115 RIGHT ANGLE HEADS



Part No.	Name of Part	Qty.	Part No.	Name of Part	Qty.
202207	Front Exhaust Deflector	1	863894	Retainer Ring	1
202208	Front Exhaust Deflector	1	863895	3/84 Spindle	1
202242	Bearing Cap (incl. 869491)	1	863897	Bearing Cap Spacer (.010")	*
202243	Side Exhaust Deflector	1	863898	Right Angle Housing	1
202244	Side Exhaust Deflector	1	863925	Wavy Washer	2
202338	Muffler	1	863926	Housing Spacer (.005")	*
202464	Rubber Grip Sleeve	1	864120	Collet Spindle	1
204370	5/81 Spindle	1	864499	Bearing Cap Spacer (.003")	*
842086	Gear Key	1	864732	Pinion Spacer (.005")	*
843356	5/16" Hex Wrench	1	865423	3/16" Collet (Opt.)	1
844320	"O"-Ring 1/6" X 1-5/16"	1	865501	5/16" Coilet (Opt.)	1
844829	Gear Spac er	1	869452	Muffler	1
847234	"O"-Ring 1-1/8" X 1-1/4"	1	869491	Warning Plate	1
847803	Nose Piece	1	869559	Housing Spacer (.010")	*
847805	3/8" Collet (Opt.)	1	869560	Housing Spacer (.020")	*
847810	Upper Spindle Bearing	1	869561	Pinion Spacer (.010")	*
847811	1/4" Collet (Std.) 6mm (Opt.)	1	869562	Pinion Spacer (.020")	*
849834	Spanner Wrench Type 27	1	881393	Support Handle (incl. 202464)	1
863892	Lower Spindle Bearing	1	881789	Gear Set (Pinion & Driven Gear)	1
			889286	Pinion Gear Gage (Opt.)	1

* Number of Spacers Required is Variable

116 & 136GL 15 RIGHT ANGLE MOTOR



Front Bearing Plate	
Type Exhaust	Part No.
Front	847518
Rear	202294

Rotor	
Model	Part No.
116	869780
136	869781

Rotor Blade	
Model	Part No.
116	867816
136	869449

Cylinder	
Model	Part No.
116	869450
136	869451

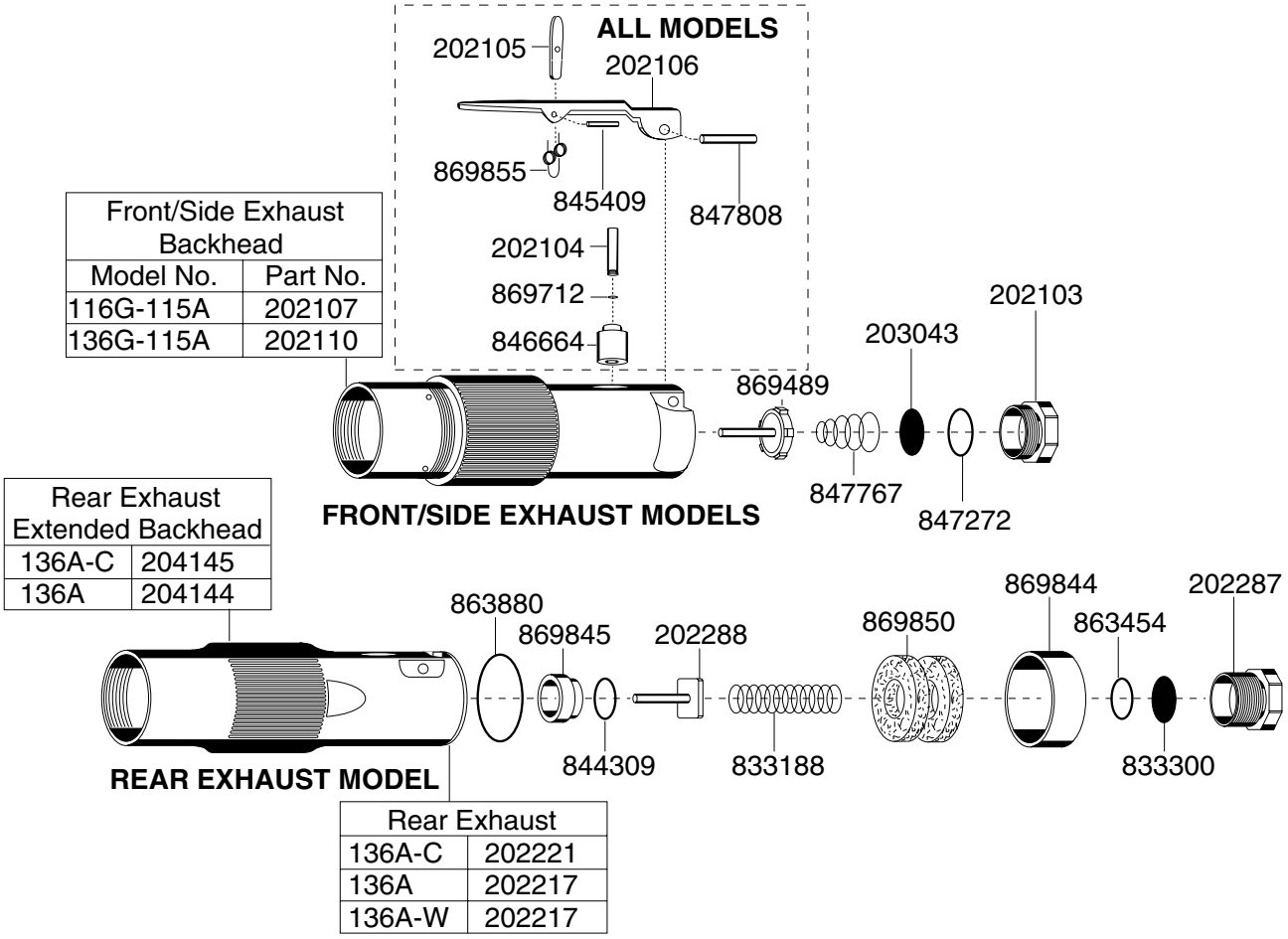
Rear Bearing Plate	
Type Exhaust	Part No.
Front	869638
Rear	202285

OPTIONAL ROTOR COLLAR	
PART NO.	SIZE
864487	.120
864488	.121
864489	.122
864490	.123
847525	.124
864492	.125
864493	.126
865416	.127
865417	.128
202076	.129
202187	.130
202188	.131

Part No.	Name of Part	Qty.	Part No.	Name of Part	Qty.
202294	Front Bearing Plate	1	867816	Rotor Blade	4
202285	Rear Bearing Plate	1	869445	Rear Rotor Bearing	1
812165	Cylinder Pin	2	869449	Rotor Blade	4
847518	Front Bearing Plate	1	869450	Cylinder (includes one (1) pin)	1
847525	Rotor Collar .124"	*	869451	Cylinder (includes one (1) pin) Rear	1
847528	Front Rotor Bearing	1	869638	Bearing Plate	1
864489	Rotor Collar .122"	*	869780	Rotor	1
864493	Rotor Collar .126"	*	869781	Rotor	1
865417	Rotor Collar .128"	*			

* Only one rotor collar required.

116 & 136GL 15 RIGHT ANGLE HANDLES



Front/Side Exhaust Backhead	
Model No.	Part No.
116G-115A	202107
136G-115A	202110

Rear Exhaust Extended Backhead	
136A-C	204145
136A	204144

Rear Exhaust	
136A-C	202221
136A	202217
136A-W	202217

Part No.	Name of Part	Qty.	Part No.	Name of Part	Qty.
202103	Inlet Bushing	1	833300	Inlet Screen	1
202104	Throttle Valve Pin (incl. 869712)	1	844309	"O"-Ring 7/16" X 5/8"	1
202105	Toggle	1	845409	Toggle Pin	1
202106	Lock-off Lever	1	846664	Throttle Pin Bushing	1
202107	Backhead (incl. 846664)	1	847272	"O"-Ring 5/8" X 3/4"	1
202110	Backhead (incl. 846664)	1	847767	Throttle Valve Spring	1
202217	Backhead (incl. 846664)	1	847808	Throttle Lever Pin	1
202221	Backhead (incl. 846664)	1	863454	"O"-Ring 9/16" X 11/16"	1
202287	Inlet Bushing (833300)	1	863880	"O"-Ring 1/4" X 1/8"	1
202288	Throttle Valve	1	869489	Throttle Valve	1
203043	Inlet Screen	1	869712	"O"-Ring 5/64" X 13/64"	1
204145	Backhead (incl. 846664)	1	869844	Exhaust Deflector	1
204205	Backhead (incl. 846664)	1	869845	Throttle Valve Seat	1
833188	Throttle Valve Spring	1	869850	Muffler Felt	2
			869855	Toggle Spring	1

COMPLETE HANDLE — SUBASSEMBLIES

Model No.	Part No.	Model No.	Part No.
116GL- 115A	861991	136GLR15A-C	861131
		136GL15A	861995
		136GLR15A-W	861135
		136GLRE15A-C	201627
		136GLRE15A	201651

The lock-off lever can be purchased as a subassembly using part no. 861992.

NOTES

NOTES

COOPER Tools

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